U.S. DEPARTMENT OF ENERGY | Legacy Management

Program Update

January–March 2017

Welcome to the January–March 2017 issue of the U.S. Department of Energy (DOE) Office of Legacy Management (LM) Program Update. *This publication is designed to provide a status of activities within LM. Please direct all comments and inquiries to lm@hq.doe.gov.*

LM received the 2017 State Historic Preservation Officer's Award at the History Colorado Center on February 1, 2017. Pictured L to R: William Frazier (LM), David Shafer (LM), Padraic Benson (LM), Jon Horn (Alpine Archaeological Consultants, Inc.), Dr. April Gil (LM), Jon Maraschin (Riverview Technology Corporation); and Sam Marutzky (LM support contractor). (Photo courtesy of History Colorado.)

Goal 6

Grand Junction Office Receives Historic Preservation Award

The U.S. Department of Energy (DOE) Grand Junction, Colorado, Office (GJO), on February 1, 2017, received Colorado's first State Historic Preservation Officer's Award in recognition of GJO's National Register nomination.

Presenting at the awards ceremony in Denver, Steve W. Turner, AIA, History Colorado executive director and state historic preservation officer, praised GJO's enthusiastic compliance with the historic preservation review process mandated by Section 106 of the National Historic Preservation Act of 1966. The newly named award is intended for those "who go above and beyond" to preserve and share history, Turner said.

"I am so pleased and proud to accept the award," Dr. April Gil told the audience of about 200. Gil is the DOE Office of Legacy Management (LM) GJO manager. "This team worked together to make this happen."

Last year GJO was listed on the National Register of Historic Places in recognition of its important, historical roles in the Manhattan Project and the Cold War. The complex along the Gunnison River south of Grand Junction traces its origins to 1943, when the U.S. government purchased a former gravel mine and log cabin/office as a uranium processing site for the U.S. Army Corps of Engineers Manhattan Engineer District.

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Inside this Update:

Goal 5

Women's History Month: LM Women in STEM

National Women's History Month (March 2017) provided an opportunity to reflect on the significant contributions women have made, and continue to make, to the success of the U.S. Department of Energy Office of Legacy Management (LM). Today women make up 53 percent of LM's workforce. In honor of Women's History Month, Gwen Hooten, Tracy Ribeiro, and Tashina Jasso shared their experiences pursuing careers in science, technology, engineering, and mathematics (STEM) fields.

LM continues to see an increasing number of women in leadership roles. Gwen Hooten, an LM Environment Team leader, remembers the early days of her career and how more women now work alongside her than ever before. Hooten served in the Colorado Air National Guard early in her career, while also working full time. She was the first female commissioned officer in her unit. "I remember going to many meetings where I was the only one whose legs were showing. It was all men in the room. There's a lot of focus when you're the only one," she said. After leaving military life, Hooten became a U.S. Environmental Protection Agency (EPA) project manager for sites requiring remediation.

"I provided regulatory oversight of 16 Superfund sites. I've been through the entire [Comprehensive Environmental Response, Compensation and Liability Act] CERCLA process. Each had its challenges," she said.

The biggest challenges Hooten faced while at EPA were regulatory requirements. "We'd ask parties involved in contamination to pay for cleanup, even if what they did was legal," she said. She remembers when EPA asked family-owned gas stations to help pay for cleanup at a mismanaged, contaminated recycling facility. EPA eventually cleaned up the contamination and refunded some of the monies back to the families that had owned the gas-stations. "By that time, we were refunding the sons and daughters of those originally involved. We did the right thing, although, it took a long time to gain acceptance to move in this direction," Hooten notes.

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Tracy Ribeiro hiking atop Angel's Landing in Zion National Park, Utah.

Tashina Jasso conducting a site inspection of the Spook, Wyoming, disposal cell.

Gwen Hooten at the Piqua, Ohio, Decommissioned Reactor Site.

Goal 1

A Forgotten Legacy – The Former Burris Park Field Station

The Burris Park, California, Site is located in Kingsburg, California, a rural agricultural community in the San Joaquin Valley, south of Fresno. The site consists of a 50-foot by 50-foot fenced area enclosing a 42-foot by 42-foot reinforced concrete slab. It is part of a 57-acre county park owned and maintained by the Kings County Parks and Grounds department.

It was at this site in 1956 that the U.S. Atomic Energy Commission (AEC) contracted the University of California, Berkeley (UC Berkeley) to establish a strontium-90 (Sr-90) research project known as the Burris Park Field Station. The site consisted of 49, 6-foot by 6-foot soil plots laid out in a square grid and separated by concrete barriers extending 30 inches into the soil and 6 inches above the ground. Three experiments using a total of 72 millicuries of Sr-90 were conducted to test the effectiveness of removing the radioactive strontium isotope from soil in the event of nuclear fallout. These studies were published in the university's journal of agricultural science, *Hilgardia,* in 1959.

AEC terminated the tests in 1963 and UC Berkeley decommissioned the site under the same contract by filling the plots with sand, placing a 6-millimeter polyethylene liner over them, and constructing a 4-inch, metal-mesh reinforced concrete slab that covered the entire gridded area. A bronze plaque identifying the Sr-90 total activity and the UC Berkeley contact was imbedded in the northeast corner of the slab. The site was later used by Kings County to display antique farm equipment and eventually all but forgotten (Photo 1).

Photo 1. Plot interior, looking north, Burris Park, California, Site before LM stewardship (2015).

Stewardship

In 2013 UC Berkeley staff contacted the U.S. Department of Energy (DOE) Office of Legacy Management (LM) to discuss the site's maintenance needs. LM representatives visited the Burris Park site January 22, 2014, and observed that the area was in disrepair. The protective concrete slab capping the Sr-90 test plots was covered with broken tree limbs and debris. Some pieces of the farm exhibit and a section of the chain-link fence surrounding the slab were crushed from fallen trees within the fenced area.

LM conducted extensive research into the site's history to determine regulatory authority and responsibility. Burris Park was determined to be ineligible for inclusion in the DOE Formerly Utilized Sites Remedial Action Program in 1987 and again in 2014, as documented in the *Elimination Report and Determination of LTS&M Authority for the Burris Park Field Station, Kings County, California* (June 2014). However, because the AEC never issued a license for Sr-90 use, DOE, as a successor agency to AEC, submitted its authority to address "unacceptable conditions" at the site, including provisions for long-term surveillance and maintenance (LTS&M). The State of California, the Kings County Parks and Grounds department, and UC Berkeley were notified about the decision, and on November 26, 2014, the Burris Park site was assigned an LTS&M Category 2 level of care and formally added to the LM sites list. LTS&M activities associated with a typical Category 2 site include routine inspections, monitoring, maintenance, records-related activities, and stakeholder support.

Site Maintenance

March 2015

LM visited the site to determine the extent of work to be conducted and to confirm that no measurable contamination was on the slab's surface (Photo 2 on page 18). The Burris Park site contained four large maple trees. Two were alive,

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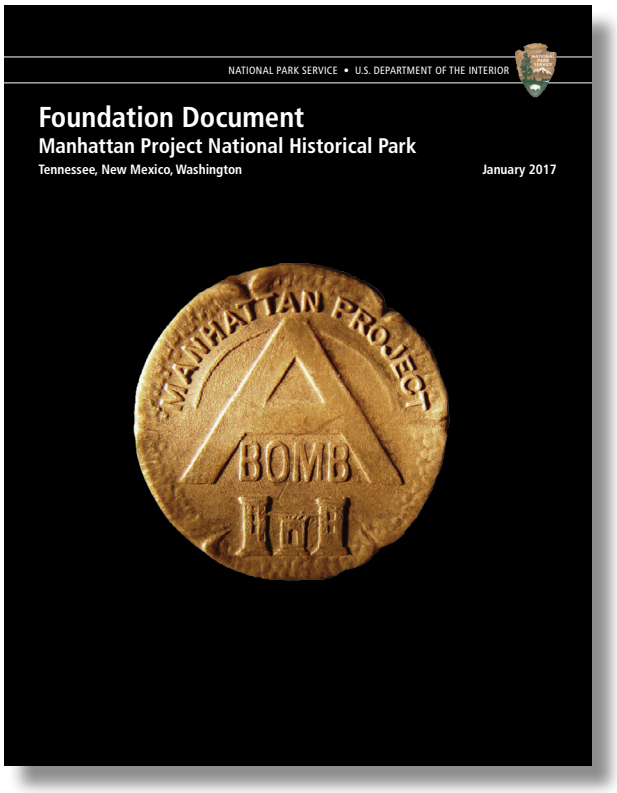
Goal 6

Final Foundation Document Released for Manhattan Project National Historical Park



In February 2017 the National Park Service (NPS) and the U.S. Department of Energy (DOE) released the Foundation Document for the Manhattan Project National Historical Park (MAPR). This document is the result of public input and joint planning by DOE and NPS. Work on the document began in February 2016 when NPS and DOE officials held public workshops and met in open houses in Los Alamos, New Mexico; Hanford, Washington; and Oak Ridge, Tennessee—the three communities where Manhattan Project research and production centers represent the park—to gather input from stakeholders and interested parties. A summary of comments is available online at https://www.nps.gov/mapr/learn/management/summary-of-public-open-house-comments.htm.

The Foundation Document is designed to affirm MAPR's core mission and significance, key resources and values, and the interpretive themes that tell its stories. Formally established in November 2015 to preserve portions of three World War II sites where the United States developed the first atomic weapons, the park marks the history of the people, science, and events that led to creating the atomic bomb in the top-secret effort known as the Manhattan Project. Foundation documents are guidance tools individualized for each of the NPS's 417 units to direct basic park planning and management. The document is now available online at https://www.nps.gov/mapr/foundation-document.htm.

MAPR was authorized in December 2014. On November 10, 2015, a Memorandum of Agreement to establish the park was signed. Under that pact, NPS operates the park and interprets its history on properties that continue to be owned and managed by DOE. In November 2016 DOE assigned its Office of Legacy Management with responsibilities for the park. Park visitor centers, which have opened at each of the three locations, represent stages in the research and production of the first atomic weapons. ❖

LM is continually seeking opportunities to protect the environment and conserve natural resources. One simple step we can take toward improving environmental consciousness is to distribute the *Program Update* newsletter by email instead of sending a printed copy.

Please send your email address and your first and last names to lm@hq.doe.gov so that we can update our database.

Thank you for your assistance.

Goal 1

Wastewater Treatment Evolution at the Fernald Preserve

Industrial wastewater treatment at the Fernald Preserve in Ohio has been ongoing since a uranium metals refinery was constructed at the site in 1951, at the beginning of the Cold War. Later, when cleanup of the site was progressing in the 1990s, wastewater treatment efforts were exponentially increased and large treatment facilities were constructed to handle contaminated surface water, groundwater, remediation wastewater, and leachate from the On-Site Disposal Facility. The centerpiece of these facilities was the Advanced Wastewater Treatment facility (AWWT), which had a design treatment capacity of 2,900 gallons per minute (GPM).

In 2003, with the major portions of the site's remediation forecasted to be completed in 2006, U.S. Department of Energy (DOE) Office of Environmental Management began negotiations with the U.S. Environmental Protection Agency and Ohio Environmental Protection Agency for a reduced wastewater treatment capacity. A smaller system was sufficient to handle the site's remaining wastewater treatment needs (mainly groundwater) when the site was turned over to the DOE Office of Legacy Management (LM) in 2006. Negotiations resulted in the site's treatment capacity being reduced to 1,800 GPM via the Converted Advanced Wastewater Treatment facility (CAWWT).

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Advanced Wastewater Treatment facility, 1996.

Converted Advanced Wastewater Treatment facility, 2006.

Goal 2

Annual Disaster Response Exercise Conducted at LM Business Center

LM federal staff and support contractors held their annual disaster response exercise on February 15, 2017, at the U.S. Department of Energy Office of Legacy Management (LM) Business Center (LMBC) in Morgantown, West Virginia. The annual exercise gauges the staff's collective understanding of how to respond during a catastrophic emergency.

This year's scenario centered on a hypothetical roof collapse—resulting from significant amounts of wet, heavy snow—in the records storage area, that also affected LM's data center. In 2016 the LMBC experienced a snow storm that produced 21 inches of snowfall. At 15 pounds per cubic foot, approximately 400 tons of additional weight rested on the LMBC rooftop. This fairly recent real-time event provided additional motivation for the exercise participants.

During the exercise the team discussed areas for potential improvement including building evacuation, personnel safety, resource protection, and reestablishment of normal operations. The scenario provided the context for reviewing many processes and procedures related to disaster response and recovery as a means for improvement.

A review of the lessons learned from the 2015 and 2016 disaster exercises was also included in this year's exercise. Those findings resulted in a revitalization of LM's records recovery guidance and the contractual procedures for accessing critical records recovery support from a nationally recognized vendor in this unique specialty.

The exercise was informative for all participants. Jeremy Evans, LM support contractor project management professional and one of the disaster exercise coordinators, stated, "The 2017 records emergency recovery exercise went great! We successfully brought together federal and contractor staff representing safety, information technology, records, and facilities to collaborate and discuss disaster readiness."

While LM hopes to never need to deploy these disaster readiness procedures, they are critical in ensuring LM's success, should a future disaster strike. ❖

LMBC staff assembled in the Bluestone conference room.

Goal 6

LM Well Represented at the 43rd Annual Waste Management Symposia Conference

During the week of March 5 through 9, staff from the U.S. Department of Energy (DOE) Office of Legacy Management (LM) gathered in Phoenix, Arizona, to participate in the 43rd Annual Waste Management Conference, the premier international conference for providing education and information exchange on global radioactive waste management.

LM helped make this year's conference a success by providing session co-chairs, panelists, paper authors, a member to the Program Advisory Committee, and a staffed informational booth in the exhibit hall. LM staff discussed topics ranging from long-term stewardship at a former uranium mill tailings site in Riverton, Wyoming, to best practices in project communications. Other topics presented by LM employees included using prescribed fire to manage the Fernald, Ohio, On-Site Disposal Facility vegetated cap, launching a research archive for Formerly Utilized Remedial Action Program site records, and engaging the public through interpretation at legacy sites.

LM staff kicking off the week at Waste Management 2017.

The Waste Management conference promotes global innovation and collaboration, which was reflected by the attendance of roughly 2,000 engineers, scientists, managers, and students from over 30 countries. A comprehensive and technical program delivered over 130 sessions and panels, 450 papers, poster sessions, networking events and an extensive exhibition. This year's featured DOE sites—the Richland, Washington, Hanford site and the West Valley, New York, site—provided special panel and paper sessions on site-specific topics. There were also reserved sessions on used fuel, decontamination and decommissioning, procurement and contracting, safety, cleanup of legacy sites worldwide, robotics, and International Atomic Energy Agency topics. The conference showcased Japan as their featured country and included an exhibit hall pavilion, as well as focus sessions on the revitalization of Fukushima and its status of nuclear fuel cycle activities.

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LM staff group together at the LM information booth before the afternoon technical program.

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Grand Junction Office Receives Historic Preservation Award

Turner elaborated on his award selection. "What's remarkable is that the preservationists who worked to save the buildings and site were so successful. It's not every day that private, government, and historical interests can come together to preserve a piece of our past. The passion of Dr. Gil, Mr. [Jon] Horn, Mr. [Jon] Maraschin, and everyone else who worked to preserve and nominate the office to the National Register of Historic Places is truly remarkable. It was an easy decision."

In 2001 DOE transferred 46 acres of the original 55.71-acre site to Riverview Technology Corporation (RTC), a business-development nonprofit sponsored by Mesa County and the City of Grand Junction. Jon Maraschin is executive director of RTC, from which DOE still leases offices at the site. The log cabin that served as the original refinery office during the Manhattan Project era is planned to open as a learning center in 2018, in conjunction with GJO's 75th anniversary.

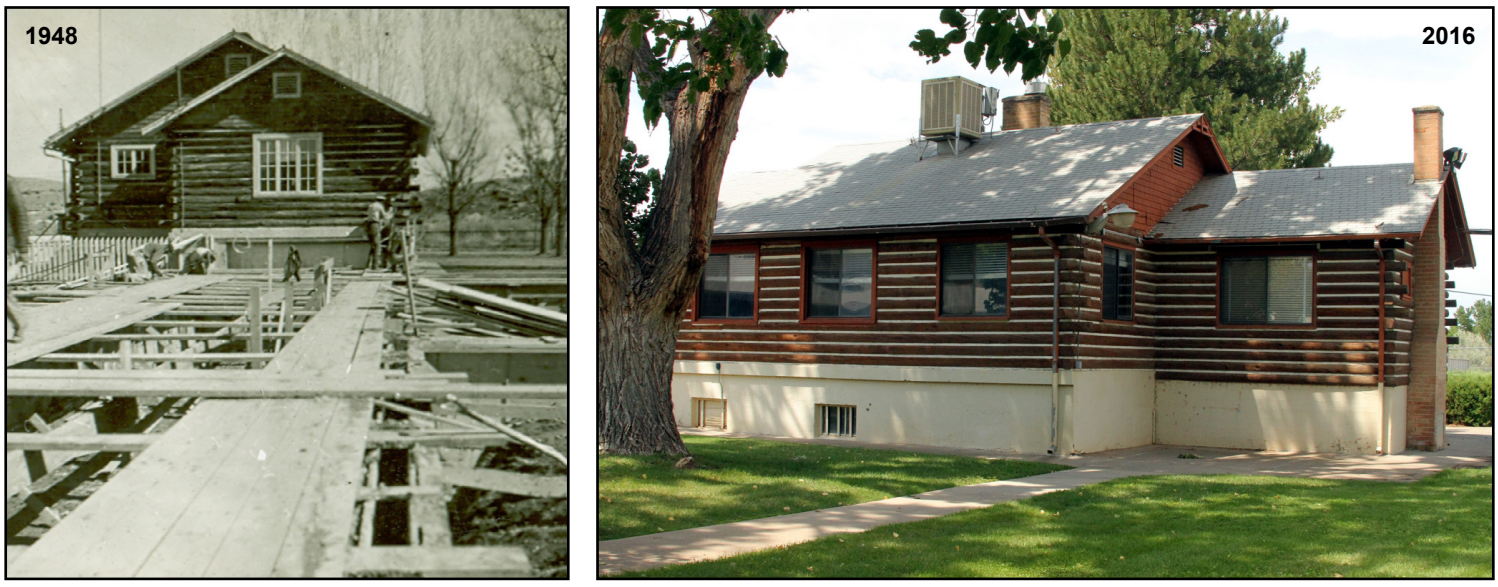
"From the beginning, the Grand Junction Office included the History Colorado Office of Archaeology and Historic Preservation in their plans for the log cabin," Turner said. "They even initiated the Section 106 process to make sure all their bases were covered before they had finalized their plans. They included us in the planning process every step of the way. They didn't wait until the end to seek out consultations. They consulted with us early and often, which is the best way to ensure a successful Section 106 process."

GJO's National Register nomination was prepared by Jon Horn with Alpine Archaeological Consultants Inc. in Montrose, Colorado. Horn's "personal knowledge of Colorado's mining history made a big difference in this effort," Turner said.

There were seven winners of the 2017 Stephen H. Hart Awards—newly renamed for the state's first historic preservation officer—which recognize outstanding projects and individual achievements in archaeology and historic preservation in Colorado. The event name was changed from the History Colorado Awards to the Stephen H. Hart Awards for Historic Preservation to focus more on preservation. The President's Award was renamed the State Historic Preservation Officer's Award for the same reason.

"I couldn't be happier with how the stakeholders came together to make sure this piece of history is preserved. This resource is valuable at the state, national, and international levels," Turner said. "It really is a model of how preservation efforts can be both successful and bring a real benefit to our understanding of history."

For more on the GJO listing, go to the National Register webpage https://www.nps.gov/nr/feature/places/16000470.htm and the History Colorado webpage http://www.historycolorado.org/archaeologists/recent-listings-national-state-registers (Mesa County).



The log cabin at the Grand Junction, Colorado, Office, was recently listed on the National Register of Historic Places.

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Women's History Month: LM Women in STEM

Tracy Ribeiro also remembers how few women were interested in chemical engineering when she was in college, but that didn't deter her, because her interest in science started as a child.

"Going into science never fazed me. I was a tomboy growing up," recalled Ribeiro. In her first classes as a chemical engineering major, her professor said one third of the students wouldn't be there after the first test and another third would be gone after the second. As a chemical engineering major, Ribeiro said, "I didn't like how I was treated as a student." She powered through calculus and differential equations but wanted to find a new major where she could apply her skills. Ribeiro wanted to explain how mountains are formed and why rivers look the way they do. She scanned the government's occupational handbook before taking her first geology class. "I was hooked. I changed over to that major instantaneously," she said.

After she graduated, Ribeiro wanted jobs where she could work outdoors. Early in her career, she worked for a university that served as a sister agency that conducted environmental investigations for the Virginia Department of Transportation. Curious for more, Ribeiro began her master's program while working. She earned an engineering management master's degree that equipped scientists and engineers with business skills they could use in the future.

Some of Ribeiro's most interesting work was during the time she was the LM Shiprock, New Mexico, site manager and trying to figure out if uranium from the adjacent Many Devils Wash was naturally occurring or from the former mill site. "When I was the site manager, they first started determining where the contamination was coming from in Many Devils Wash. It's a puzzle. Sometimes the puzzle isn't solved, but it doesn't mean we can't keep putting pieces into it," she said.

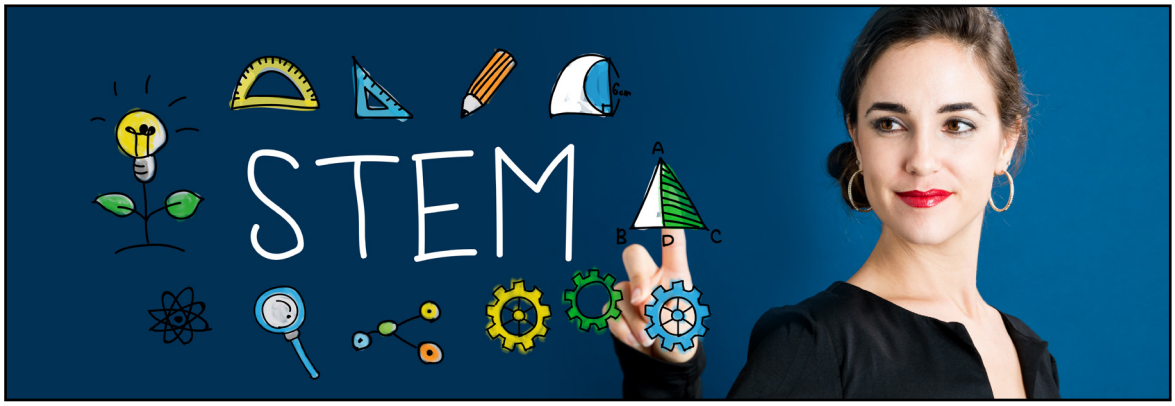
Nowadays, pursuing a STEM profession is common for women. Tashina Jasso grew up in New Mexico and wanted to study environmental science, with a focus on fate and transport of contaminants in groundwater.

During her undergraduate studies, she interned with the Bureau of Land Management (BLM). She developed her skills as a hydrological and geographic information system technician. She then worked for the LM contractor as an intern beginning her graduate studies. Some of her contractor positions included being part of the environmental monitoring team, contributing as a project coordinator, and helping manage sites as a site lead. "Getting the field experience helped me understand some of the bigger issues," said Jasso, who visited 23 sites during her work with LM's contractor.

After a few years working for the LM contractor, Jasso was ready for the next challenge. This year, LM hired her as a site manager. "I'm grateful for the opportunity and am enjoying being more involved in the decision making process," said Jasso. "Coming to DOE, I am seeing more women in these types of roles. It's always encouraging." Jasso is ready to take on the challenges faced at her LM sites.

"When it comes to STEM, I still see more opportunities for women to move into management roles. When I came to LM, I could look up to quite a few women. I'm thankful that they've helped pave the way," said Jasso.

Looking toward the future generations of scientists and engineers, Hooten encourages, "Follow your dreams. Today, we have women in all kinds of positions. If there's an interest in STEM, follow your dream. You can do it. The obstacles of years past have been torn down." ❖



Goal 2

LM Sites Reuse and Recycle During Office Clean-Out Days

U.S. Department of Energy Office of Legacy Management (LM) offices held clean-out days during the week of January 30 through February 3, 2017. The objectives of the clean out included reducing and organizing physical and electronic files, submitting federal records for filing, recycling personal papers and other nonrecords, and consolidating unneeded office supplies.

Participants also followed good records management practices by ensuring continued preservation of litigation hold items, shredding nonrecords containing sensitive or personally identifiable information, and capturing records in the format they were received.

LM Program Analyst Jeanie Gueretta headed the planning committee that guided the clean-out effort and addressed site-specific needs. The committee disseminated several employee communications before and during the clean out, informing personnel of the importance of prioritizing reuse and recycling ahead of waste disposal, and providing guidance on how to organize and maintain electronic files.

LM personnel reported that cleaning out unneeded electronic files significantly reduced their network storage usage.

Sara Woods, an LM support contractor environmental scientist, noted that the clean out resulted in a significant amount of reusable office consumables such as binders, file folders, and other office supplies. At the Grand Junction, Colorado, office 17 boxes of reusable three-ring binders and 20 boxes of reusable hanging file folders, no longer needed by LM, were donated and distributed to schools in Mesa County Valley School District 51. This effort not only increased landfill waste diversion through reuse, but also provided a way for LM to give back to their community. Woods noted that the schools were appreciative of the donations.

The office clean out also successfully yielded an increase in recycling at the participating sites. The Fernald Preserve in Ohio recycled over 535 pounds of paper, while the Grand Junction office reported 750 pounds more recycling during clean-out week.

While the office clean out is planned as an annual LM event, personnel were encouraged to be proactive and make regular office clean outs part of their normal routine. ❖

Sue Smiley, LM Fernald Preserve site manager, supported Office Clean-Out Days by organizing or recycling the contents of her office file drawers.

Recycling and consumable reuse centers (like this one at the Westminster, Colorado, office) were available at many LM offices to collect materials.

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Wastewater Treatment Evolution at the Fernald Preserve

By 2010, with aquifer restoration pumping efforts yielding in excess of 2 billion gallons per year, the uranium concentration in the groundwater being pumped had been reduced to the degree that treatment for uranium removal was only needed intermittently and the CAWWT was considerably oversized. Increasing maintenance of the aging CAWWT equipment led LM to commission a condition assessment of the facility, which was completed in early 2015. The assessment identified numerous components at or near the end of their design life. With the results of the assessment in hand, and the fact that the facility treatment capacity was substantially more than needed, LM began looking at options for a new right-sized treatment system to handle the site's needs until groundwater remediation is completed—currently projected for 2039.

Options were evaluated in spring 2015, and LM presented the recommended changes to regulators and stakeholders. Approvals for a new, smaller system with a 50 GPM capacity were obtained through a series of meetings in the summer of 2015. After more detailed planning during fall 2015, LM initiated the project in 2016. The project is comprises of the following phases.

1. Removal and disposal of used media, piping, and tanks to make room for the new system in the existing building
2. Design of the new system
3. Construction, installation, and start-up of the new system

The media removal and decontamination and demolition work was completed in January 2017. The design of the new system is anticipated to be finalized in spring 2017, after which a contractor will be hired to complete the construction and installation of the system, which is projected to be operational by early 2018. The new system is being designed to handle the site's wastewater treatment needs through 2039. ❖

CAWWT interior before (October 2016) and after (January 2017) tank removal to provide room for the new, smaller treatment system.

Goal 6

LM Shares Environmental and Spatial Data with EPA

In an effort to improve the visibility of U.S. Department of Energy Office of Legacy Management (LM) long-term surveillance and maintenance (LTS&M) strategies, the U.S. Environmental Protection Agency (EPA) and LM coordinated to provide additional means to stakeholders for data access. Specifically, EPA is interested in providing access to the environmental and spatial data collected by LM. These data provide transparency and insights into the success of LTS&M strategies used by LM and are accessible via the Geospatial Environmental Mapping System (GEMS) (Figure 1).

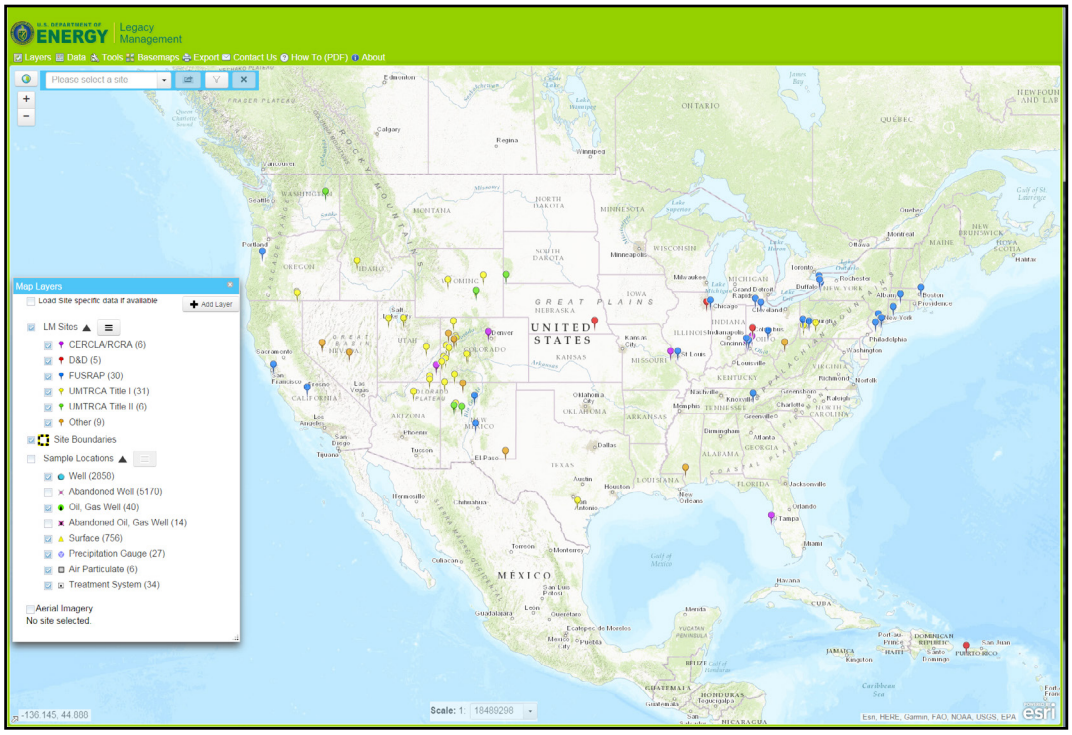

Figure 1. GEMS (https://gems.lm.doe.gov/).

LM presented GEMS and the potential offered by Esri Story Maps to EPA in January. GEMS was designed to provide dynamic mapping and environmental monitoring data display for sites managed by LM. As Esri indicates, "Story Maps let you combine authoritative maps with narrative text, images, and multimedia content" (https://storymaps.arcgis.com). The information made available and the environmental data display tools developed for GEMS are the result of input from various stakeholders including LM and contractor staff, regulatory agencies, and members of the public. While these data are valuable to stakeholders familiar with LM sites, the detailed context explaining contribution of this data to LTS&M strategies is really only available through downloadable documents available from the LM website (https://energy.gov/lm/). To more closely couple these information sources LM is exploring the potential of Story Maps.

A demonstration Story Map (Figure 2 on page 13) was prepared for the Gunnison, Colorado, sites and shared with EPA. In addition to bringing information from both webpages together, the Story Map included new animations comparing temporal changes in land use and uranium concentrations. Organizational considerations for Story Map development were also discussed. Although LM Story Maps provide a much more engaging platform to share information with stakeholders, their public release is pending. Until that time, EPA can incorporate the data available from GEMS into their Cleanups in My Community webpage (CIMC) (https://www.epa.gov/cleanups/cleanups-my-community) and CIMC Map (Figure 3 on page 13).

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LM Shares Environmental and Spatial Data with EPA

A meeting was held in February to coordinate the data sharing to CIMC. While the complexities associated with accessing environmental data requires a follow-up meeting, immediate access was given to the geospatial data currently visible on GEMS. EPA indicated that they also plan to develop Story Maps on EPA cleanup and other projects, to better take advantage of the latest story-driven technology to share information with stakeholders. ❖

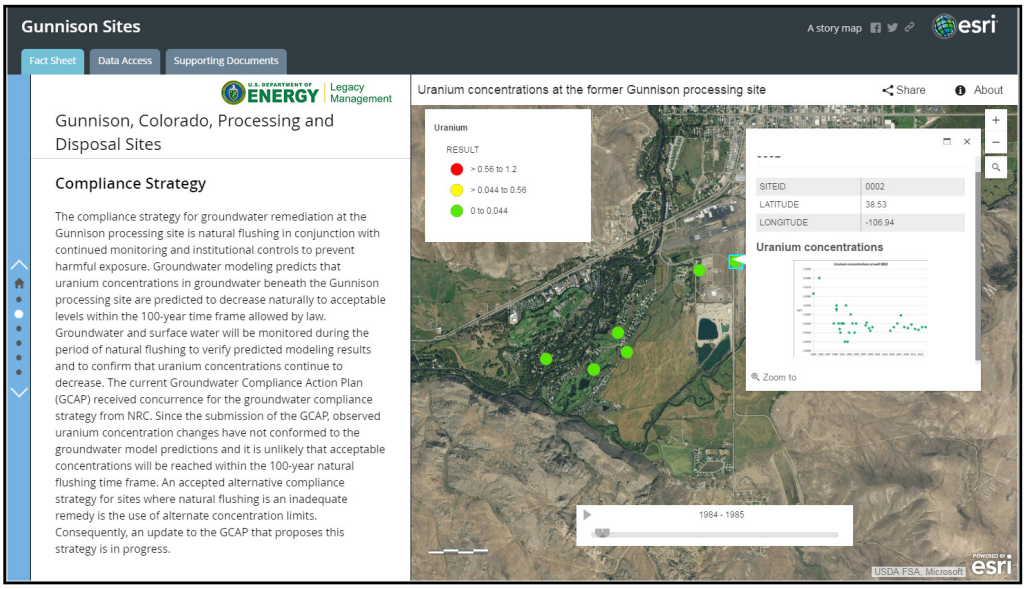

Figure 2. Demonstration Story Map of the Gunnison processing and disposal sites. Included is an animation of measured groundwater uranium concentrations with embedded time-series plots of all sample data measured at wells.

Colors indicate compliance with drinking water standards (green), proposed alternate concentration limits (yellow), and noncompliance (red).

Figure 3. EPA's Cleanups in My Community Map (https://ofmpub.epa.gov/apex/cimc/f?p=cimc:map::::71).

Goal 5

LM Welcomes New Employees

LM-1 Office of the Director

Brittany Reynolds has joined the U.S. Department of Energy (DOE) Office of Legacy Management (LM) Human Resources Team. She was born in Washington, DC, where she graduated from Howard University with a bachelor of arts in English literature. She continued her studies at the University of Maryland where she received her master of business administration in management and organization. She started her federal career in the human resource department at the Federal Aviation Administration. Learning a variety of human resource skills in staffing, marketing and recruitment, worker's compensation, and executive resources, she continued her human-capital career, transferring to DOE and serving on the Office of Electricity Delivery and Energy Reliability (OE) Workforce Development Team where she served as OE's training coordinator and human resources personnel liaison.

Krystyna Frolich recently joined the Public and Intergovernmental Engagement (PIE) Team as a public participation specialist. Frolich is a graduate of DePaul University in Chicago, Illinois, where she earned a bachelor of arts and master of arts in communication. Prior to joining the PIE Team, Frolich was employed as a hearing representative with the U.S. Department of Labor's Division of Energy Employees Occupational Illness Compensation. In this role, she held hearings and issued final decisions on claims for benefits filed by current and former DOE contractor and subcontractor employees (or their survivors) who worked at covered DOE facilities. Frolich also processed claims filed by Radiation Exposure Compensation Act Section 5 employees (or their survivors) who worked at covered DOE uranium mines and mills.

LM-10.0 Office of Business Operations

Jonathan Damiano is LM's first quality assurance (QA) manager. He is located at the LM Westminster, Colorado, office. Prior to joining LM, he was the program manager of the Internal Control/Assurance and Risk Management Program at the U.S. Department of the Interior (DOI) Bureau of Reclamation (BOR) in Lakewood, Colorado. Before working for BOR, he worked for the U.S. Department of Defense, performing engineering and quality assurance oversight on design, development, and production acquisition programs. Damiano has a bachelor of science in industrial engineering from Purdue University and a master of science in systems engineering from the Naval Post Graduate School. He grew up in Pittsburgh, Pennsylvania, and now lives with his wife Donna in Golden, Colorado. He enjoys hiking, skiing, and bike riding, and is an avid runner.

LM-20.1 Office of Site Operations

Bernadette Tsosie is joining Environment Team 1 in Grand Junction, Colorado, as a site manager. Tsosie comes to LM with 25 years of experience with the federal government and the Navajo Nation. She received both her bachelor and master degrees in geology from the New Mexico Institute of Mining and Technology. Tsosie was a Navajo Nation staff hydrologist with the Department of Water Resources Water Management Branch in Fort Defiance, Arizona, as a member of the first Navajo Nation water settlement team. She was responsible for providing water settlement technical updates and obtaining comments and resolutions from seven Navajo Nation Chapters located along the San Juan River. For the past 11 years, she was with DOI's Bureau of Indian Affairs in Gallup, New Mexico, where she served as the Water Resource and Safety of Dams Branch chief, the Navajo-Gallup Water Supply Project manager and regional hydrologist, monitoring and providing technical assistance on natural resources projects.

Recently appointed as Canyon de Chelly Strategic Vision Statement team member, Tsosie assisted with the five-year predevelopment plan and while working with the U.S. Environmental Protection Agency (EPA), she also provided technical assistance to the seven Montana tribes who developed programs to develop background levels for their wetlands, surface, and ground waters.

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LM Welcomes New Employees

LM-20.1 Office of Site Operations (continued)

Ken Kreie was born and raised in Grand Junction. He graduated from Colorado Mesa University in 2001 with a bachelor of science in environmental restoration and waste management. He currently lives in Fruita, Colorado, with his wife and children. Kreie worked as a regulatory and environmental consultant in the oil and gas industry for 15 years. He has worked in many positions from field technician to senior project manager. The majority of his work experience has been conducting groundwater monitoring, facility planning, regulatory compliance, and incident response. Kreie is a founding board member of Cavalcade, a nonprofit performing arts center in Fruita. He is excited to begin the next chapter of his career and bring his unique skill set to LM.

Tashina Jasso moved to Grand Junction from New Mexico, where she was born and raised. Prior to working for LM, Jasso was attached to the 44th Army National Guard band where she played the flute and piccolo. She later worked for the U.S. Bureau of Land Management (BLM) as a hydrological technician and as a geographic information system (GIS) technician, then as an LM support (LMS) contractor. She began her LMS work as a field science intern, and then worked in various positions, including environmental monitoring operations, as project coordinator for Title I and Title II sites, and as a site lead. She studied environmental science, focusing on fate and transport of contaminants and incorporating spatial representation using GIS. Passionate about continuing her education she completed graduate school at the University of Denver where she earned her master's degree in environmental policy and management.

LM-20.2 Office of Site Operations

Andrew Keim comes to LM with a wealth of experience as a senior project manager for Leidos Engineering LLC (formerly Science Applications International Corporation) for 19 years. He has vast expertise and knowledge of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), including playing a key role in supporting and managing work from the remedial investigation/feasibility study stage through remedial design/remedial action; managing and coordinating development of several ecological and human health risk assessments; and developing, implementing, and managing post-remediation maintenance and environmental monitoring programs for a variety of sites. Keim has worked on the mill site and vicinity properties projects in Monticello, Utah, as a support contractor to EPA. In addition to CERCLA work, He has worked extensively in the oil and gas industry. Prior to his tenure at Leidos, he was a project manager for URS Consultants Inc. for two years. Keim has a bachelor of science in geology from Iowa State University and a master of science in geology (emphasis in hydrogeology) from University of Toledo. He is a licensed professional geologist in the states of Wyoming and Utah. He will be working with Environment Team 20.2 in the Westminster office.

Brian Zimmerman has been an independent contractor supporting the EPA Office of Research and Development National Exposure Research Laboratory, Systems Exposure Division; Microbial and Chemical Exposure Research Division; Biohazard Assessment Research Branch; Environmental Futures Analysis Branch; and other program areas in Cincinnati, Ohio, since 2010. Zimmerman was instrumental in the set-up and operation of experimental systems, collecting microbiological and related water quality data, compiling and analyzing data, and writing manuscripts describing the work. He has assisted in developing models to evaluate health risks in engineered and natural systems and has authored several quality assurance project plans and health and safety plans, as well as several peer-reviewed journal articles, oral presentations, technical reports and poster presentations. Zimmerman received his bachelor of science in environmental studies in 2011 and received his master of science in environmental science and engineering in 2014, both from the University of Cincinnati. He will be working with the Environment Team 20.2 at the Fernald Preserve, Ohio, Site.

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LM Welcomes New Employees

LM-20.3 Office of Site Operations

Polly Robinson has joined the LM-20.3 Asset Management Team in Grand Junction as a realty specialist. She has 20 years of asset management experience in the federal sector. Robinson began her career as an intern at the DOE Grand Junction office. Following graduation from Colorado Mesa University, having received a bachelor degree in environmental restoration and waste management, she worked as a contractor in the Grand Junction site analytical laboratory, before transferring to the LMS asset management team. For the past 10 years, Robinson has worked as a contractor on the DOE Office of Environmental Management Moab, Utah, project as the property manager and sustainability coordinator.

Greg Cummings received his bachelor of science from the University of Arizona in Tucson in 2006. Following graduation, he was commissioned and entered active duty in the U.S. Air Force. Cummings served as a logistics readiness officer and was stationed at Elmendorf AFB in Anchorage, Alaska. After five years working various assignments, Greg left active duty in 2011 and was hired by U.S. General Services Administration as a project manager in the Anchorage field office. For the past five years, he has managed build-outs of lease and construction projects, providing space requirements for multiple federal agencies in Alaska. Cummings grew up in Mancos, Colorado, and still considers western Colorado home. He is excited to take the position of LM's facility and personal property manager in Grand Junction. In his free time, he enjoys spending time outdoors with his four young boys and wife, Andrea.

LM-20.4 Office of Site Operations

Brent Lewis is joining the LM Uranium Mine Team after working with BLM as a mine reclamation specialist. He has more than 30 years of private and government experience including some time as a DOE employee at Rocky Flats, Colorado. Lewis was the abandoned mines program lead for the State of Colorado and has extensive reclamation and remediation experience. He received two DOI National Environmental Achievement Awards during his time with BLM. He has a master degree in geology from University of Colorado and two bachelor degrees—one in geology and one in environmental science—from Eastern Kentucky.

Cassandra (Cassie) Gauthier is a physical scientist joining the LM Uranium Mine Team. Prior to DOE she worked as an LMS site lead, managing a variety of LM sites and projects. She began her career as a medicinal chemist after completing undergraduate studies in chemistry at Michigan Technological University in Houghton. Her desire for a diverse career and passion for science lead her to return to school to pursue a master degree in environmental science and engineering at Colorado School of Mines. After completing her graduate studies, working briefly in the oilfield, and working on the LMS contract, Gauthier moved to Texas and took a break from work to focus on her young son. She has returned to LM work and to Colorado, eager to continue her career and to hit the ski slopes. ❖

Goals 4 and 6

Weldon Spring Site Visitors Enjoy Rare Viewing of the Supermoon

There are few occasions in life that make you wonder, be amazed, and experience the thrill of scientific discovery. The Weldon Spring, Missouri, Site's View the Supermoon event, held November 14, 2016, was one of those incredible occasions.

Interpretive center visitors viewed the supermoon with astronomers.

What is a supermoon?

A supermoon is a natural occurrence when a full moon is at its closest point of orbit to Earth, appearing larger and brighter than normal. The November 2016 supermoon was likely the closest a full moon has been to Earth in the 21st century. Some have called it the "superest" of the supermoons. The Weldon Spring site teamed up with the Astronomical Society of Eastern Missouri and the St. Louis Sci-Fi and Fantasy Club, reaching 150 participants who experienced this amazing event. Some visitors viewed the moon with astronomers next to the Interpretive Center. Others joined site staff on top of the site's 41-acre disposal cell. Indoors, visitors learned about the Weldon Spring site's history, remediation activities, and prairie restoration. Partnering astronomers demonstrated telescopes and provided a slideshow of other astronomical events.

Why host a supermoon event at the Weldon Spring site?

Urban lights make it difficult to find quality observation areas near St. Louis, Missouri. The Weldon Spring site is located in the center of 17,000 acres of forest and prairie land, approximately 30 miles west of downtown St. Louis. This land was originally used from 1941 to 1945 as a World War II munitions plant. Nearly 15,000 acres became public land managed by the Missouri Department of Conservation. About 200 acres in the center were used from 1957 to 1966 as the Weldon Spring Uranium Feed Materials Plant. Cleanup occurred from 1985 to 2001, and today the site is home to a 150-acre prairie, 41-acre disposal cell, and the U.S. Department of Energy Office of Legacy Management's first interpretive center (opened in 2002). The interpretive center engages students and families in the site's history and legacy through science, technology, engineering, arts, and math. ❖

Exhibit hall visitors learned about different telescope technologies.

Event participants joined site staff to view the supermoon from the top of the 41-acre disposal cell.

Continued from page 3

A Forgotten Legacy – The Former Burris Park Field Station

and two were dead and fallen. UC Berkeley developed and implemented a sampling plan to determine the Sr-90 uptake of the four trees on the site, and a background tree in another area of the park. The sampling plan defined the criterion for contamination from Sr-90 as concentrations that were greater than or equal to three standard deviations above background (bkg ± 3 SD). The dead T-3 and T-4 trees average analytical results were above bkg ± 3 SD, averaging 1.7 picocuries per gram and 0.30 picocuries per gram, respectively. Live tree T-1 and T-2 sample results both averaged less than bkg ± 3 SD.

July 2015

LM requested that Kings County remove the antique farm equipment, and initiated cleanup, including: repairing the fence, cleaning the concrete slab, and cutting and stacking wood from the fallen trees. In addition, the two live trees were removed (cut and stacked) to ensure that no future strontium uptake was possible and to insure that the Sr-90 enclosure remained intact (Photo 3).

September 2015

LM completed site maintenance by subcontracting the packaging and offsite disposal of the tree debris to Energy*Solutions* low-level waste disposal facility in Clive, Utah; posting the fence with LM contact information; and removing any new perennial vegetation from the site (Photo 4). Although T-1 and T-2 material was determined to be statistically clean, the State of California has no formal Sr-90 guidelines; therefore, all tree material was disposed at the Energy*Solutions* facility.

December 6, 2016

The first annual inspection (Photo 5 on page 19) was conducted and the site was found to be in good condition and compliant with the criteria set forth in the *Burris Park, California, Site Long-Term Surveillance and Maintenance Plan* (LTS&M Plan) (DOE 2016). The LTS&M Plan establishes how LM will maintain the site to ensure it remains protective until the Sr-90 no longer poses a radiation threat to human health and the environment. It is estimated that 20 millicuries Sr-90 currently remain in the Burris Park site enclosure. Based on the isotope's natural decay rate, the site will meet unrestricted use criteria around the year 2240.

Photo 2. Northeast corner of slab, looking west (2015).

Photo 3. Southeast corner of slab, looking northwest (2015).

Photo 4. Burris Park site following cleanup, looking south (2015).

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A Forgotten Legacy – The Former Burris Park Field Station

Immediately following the site inspection, a long-term stewardship discussion was held by LM with the Kings County Parks, the California Department of Health, the LM support contractor, and UC Berkeley representatives in attendance (Photo 6). The forum discussion focused on an in-depth stewardship strategy designed to get input from regulators, the county, and other interested parties, when considering the future of the park and the surrounding areas, as well as a regulatory perspective as to how the site can be managed to best protect the community and the environment. The members came to consensus on all stewardship initiatives. The most significant point for the path forward is that LM will retain responsibility for the site and maintain the fence and concrete containment until Sr-90 activity within the enclosure reaches background concentrations. ❖

Photo 5. First annual inspection found the Burris Park site to be in good condition (2016).

Photo 6. 2016 Burris Park inspection team (L to R): Roger Lupo, Radiation Health Branch of the California Department of Public Health; Darina Castillo, LM site manager; Nathaniel Killebrew, Kings County Burris Park custodian; Cliff Carpenter, LM site manager; Tim Breshears, Kings County Parks and Grounds superintendent; Michele Miller, LM support contractor site lead; Jim DeZetter, Environment, Health and Safety at UC Berkeley; Elizabeth Holland, LM property management specialist (2016).

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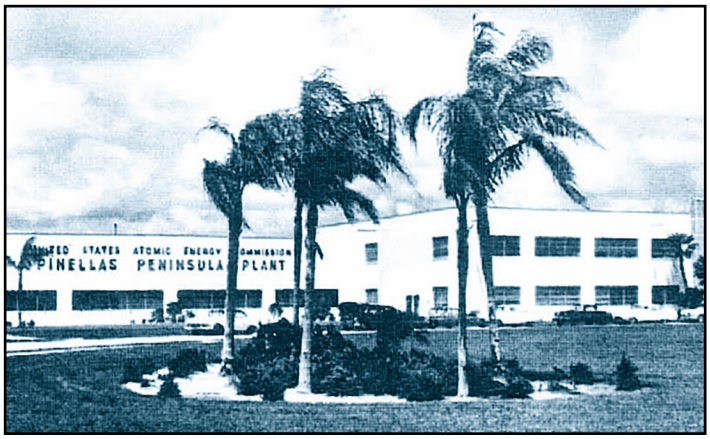
LM Well Represented at the 43rd Annual Waste Management Symposia Conference

Across the board, LM received positive feedback from attendees and was regarded as a well-respected organization at the conference. For those in attendance unfamiliar with LM, it was a chance to provide education on the Department's responsibility for long-term historical documentation, stewardship of legacy sites, and protection of human health and the environment.

Overall, the conference provided LM attendees a great opportunity to share and exchange ideas, technical information and solutions with the world's leading experts in the nuclear waste industry. ❖

LM staff at the Waste Management 2017 LM information booth.



The Pinellas Plant, circa 1960s.

Goal 3

LM Supports Contractor's Efforts to Save Taxpayer Dollars

On January 18, 2017, Lockheed Martin agreed to purchase annuities from a top-rated insurance company on behalf of over 1,100 retirees and their spouses who participate in the Lockheed Martin Specialty Components (LMSC) pension plan. LMSC is the retirement benefits administrator for former U.S. Department of Energy (DOE) contractor workers of the Pinellas County, Florida, Site. The site is located in Largo, Florida, about 10 miles north-northwest of St. Petersburg and across Tampa Bay from the city of Tampa. The purpose of the facility was to develop and manufacture components for the nation's nuclear weapons program.

This action will bring to conclusion a project to terminate the pension plan and transition those benefits to a private insurance company. There is no loss in benefits. By terminating the plan, DOE will no longer be subject to future market risks that would require annual appropriations to reimburse LMSC for maintaining minimum funding levels. Additionally, this action is expected to save the taxpayers $8 million in administrative costs over what would have been the remainder of the plan.

The DOE Office of Legacy Management (LM) is committed to safeguarding former contractor workers' retirement benefits. By supporting LMSC's proposal to terminate the pension plan, LM is able to keep their promise to Cold War retirees and their spouses while using taxpayer dollars more prudently and efficiently. ❖

Goal 6

MAPR Progress Provided at Conference

On February 24, 2017, Tracy Atkins, U.S. Department of Energy's (DOE) principal representative for the Manhattan Project National Historical Park (MAPR), served on a panel of speakers at the Energy Communities Alliance conference in Washington, DC. The conference theme was "The New Administration: Securing Progress," and Atkins' panel led a discussion on progress made over the last year at each of the MAPR sites in Los Alamos, New Mexico; Hanford, Washington; and Oak Ridge, Tennessee.

In her remarks Atkins noted that MAPR sites had more than 90,000 visitors in 2016. Accomplishments included eliminating the age requirement for tours at Hanford and hosting the site's first fundraisers—an REI bike ride and a B Reactor choral concert. Oak Ridge staff created special program tours for Girl Scouts and Girls Inc. and expanded DOE facility access for bike tours and interpretive events, including the "Secrecy, Security, and Spies" program. Los Alamos staff supported the National Park Service Ranger Rendezvous tours and enhanced the visitor experience by incorporating an augmented-reality application that allows visitors to see the town as it was in the early 1940s.

Looking ahead in 2017, Atkins noted that site staff will be focused on identifying and implementing additional community projects to extend park access, as well as evaluating and defining future budget needs for building preservation and access. ❖

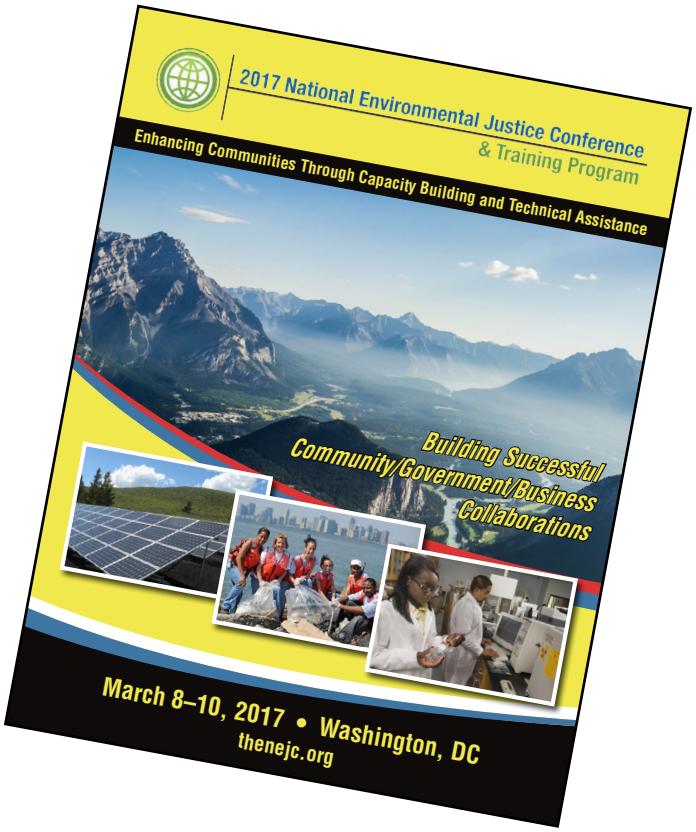
Tracy Atkins, DOE principal representative for MAPR, briefs Energy Communities Alliance Conference attendees on LM's MAPR accomplishments.

Goal 6

Environmental Justice Activities

2017 National Environmental Justice Conference and Training Program

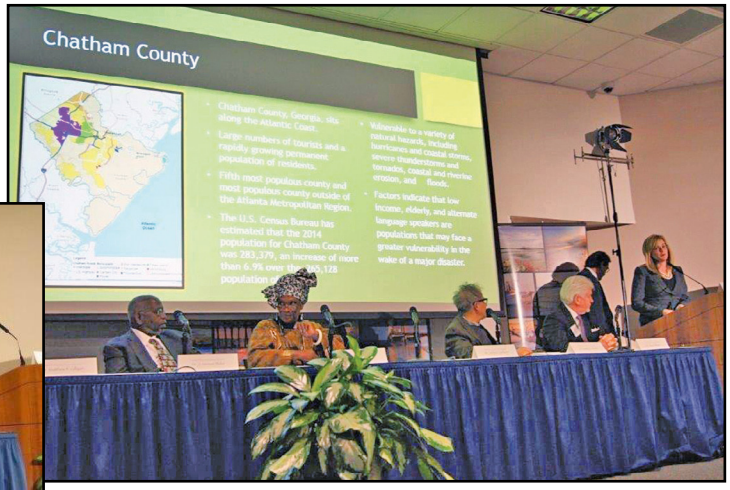
March 8 through 10, 2017, more than 600 registered participants attended the 11th *National Environmental Justice Conference and Training Program* in Washington, DC. This year's conference theme, *Building Successful Community/Government/Business Collaborations*, was derived from the past 10 annual conferences. The conference brought together people from all over the country who are engaged and committed to the principles of environmental justice.



The three day conference included speaker panels and more than 20 technical assistance workshops, a presentation titled "Listening to the Community" by Milton Bluehouse, Jr. from Navarro Research and Engineering Inc., and a keynote address from the Honorable James E. Clyburn, U.S. Representative for South Carolina. Additionally, a full day of the conference was dedicated to young future environmental justice leaders and was attended by more than 100 high school and college students from around the country.

The conference concluded with the annual Hero and Shero awards. The recipients were Ms. Kim Lambert and Mr. Mustafa Ali. Both recipients are long time civil servants and members of the Federal Interagency Working Group on Environmental Justice. ❖

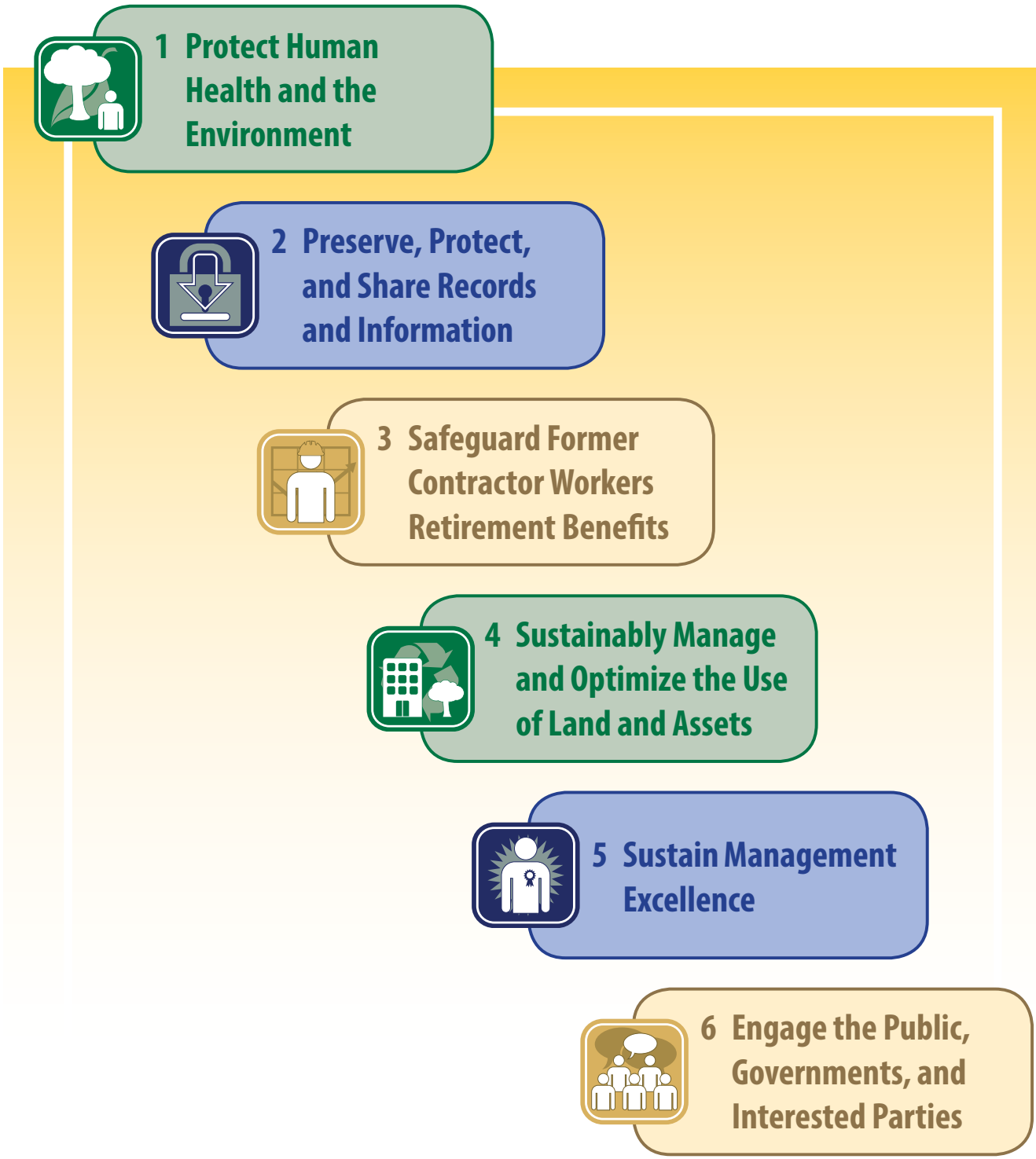
Pictured L to R: Dr. Oluwole Ariyo, Mr. Albert George, Mr. Kevin Mills, Dr. Alesha Wright, Mr. Nick Deffley, Dr. David Rivers (standing).



Pictured L to R: Dr. Herman Blake, Dr. Mildred McClain, Mr. Ramsey Khalidi, Mr. Stewart Williams, Dr. Kenneth Sajwani (side), Ms. Jackie Jackson (standing).

Anticipated LM Sites Through Fiscal Year (FY) 2025

LM Goals


1 Protect Human Health and the Environment
2 Preserve, Protect, and Share Records and Information
3 Safeguard Former Contractor Workers Retirement Benefits
4 Sustainably Manage and Optimize the Use of Land and Assets
5 Sustain Management Excellence
6 Engage the Public, Governments, and Interested Parties

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